

# Climate Change Innovation

*EIT Climate-KIC Contextual Learning Journey*

5 July to 13 August 2010 in Paris,  
London and Zurich

## Course Description

## Programme for 5 July 2010 (preliminary)

Venue Mines Paris Tech

9 -11.30 Introduction  
Rules of the game (Coaches)  
Ice Breaker and Group Introduction Session  
(Steiner with Kruijne, Mohamed and Bücken)

11.30-14.00 Student working lunch with groups of five or six

Company case study highlighting key essentials for innovation at EDF  
(Mohamed and key representatives from EDF)

Sandwich Lunch ca. 12.30-13.15 and followed by 45 minutes debrief

2 pm Welcome of the CEO Climate-KIC: Jan van der Eijck

2.15 pm Innovation Policy in the US and Europe (Frans Nauta)

3 pm The Entrepreneurial Journey (Oliver Bücken)

3.45-4.15 Coffee Break

4.15 Thales, Bayer, sap and/ or other core corporate partners:  
How Climate-KIC core corporate partners innovate

6 pm Keynote speech by Jean Jouzel on Climate Change (tbc)

Description	Concise Information
<b>Thematic area</b>	Ideation, Team Building, Idea Pitching
<b>Lecturers/Coaches</b>	<p>Susanne Steiner and Codrin Kruijne; Oliver Bücken and Ebrahim Mohamed</p> <p>Email:</p> <p><a href="mailto:susanne.steiner@tu-berlin.de">susanne.steiner@tu-berlin.de</a></p> <p><a href="mailto:L.C.Kruijne@uu.nl">L.C.Kruijne@uu.nl</a></p> <p><a href="mailto:buecken@unternehmertum.de">buecken@unternehmertum.de</a></p> <p><a href="mailto:e.mohamed@imperial.ac.uk">e.mohamed@imperial.ac.uk</a></p>
<b>Time and Place</b>	
5 July, morning and lunch session, Paris	<p>Warming up games and Rules of the game (Steiner)</p> <p>Group based Exercise: Case StudyEDF (Mohamed)</p>
7 + 8 July, 17-18.30, Paris	Idea Generation and opportunity assessment (Coaches and SIRTa)
14 July, 9- 13, Paris	Ideas Pitch and Team Building, Paris, 14-07-2010 (Kruijne, Steiner)
<b>Learning Outcome</b>	
<p>How does this theme contribute to the overall learning outcomes of the contextual learning journey?</p> <ol style="list-style-type: none"> <li>1. Common understanding of climate change issues in Europe and entrepreneurship (knowledge)</li> <li>2. Ability to understand, design and execute research at Master and PhD level resp. (research) – <i>less relevant at summer school</i></li> <li>3. Ability to communicate about climate change causes, consequences and solutions (outreach)</li> <li>4. To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&amp;I programmes (application)</li> </ol>	<ul style="list-style-type: none"> <li>• Understand difference between ideas and business opportunities (1)</li> <li>• communicate business opportunities in pitches (1)</li> <li>• interdisciplinary team building (4)</li> <li>• Prepare students for the experience of “Team performance” as a result from collective work products and individual performance (4)</li> </ul>
<b>Summary abstract of the theme</b>	Pitching and Team building is a core principle in Entrepreneurship. Students from different academic, cultural and experience backgrounds merge.
<i>Please indicate how the individual learning sessions of your theme relate to each other and thus create a joint theme</i>	
<b>Total Theme Time 2010, i.e. across CLCs (h)</b>	3-4 hours on First Day of Journey (5 July), 4 hours of ideation (2 hours resp. 7 and 8 July), at least 4h on 14 July.
<b>Country nodes involved</b>	NL, Germany, UK
<b>Non-academic sectors involved</b>	

## Keynote Speeches

## Entrepreneurship and Innovation Policy

### Lecturers

- I. Frans Nauta, Collocation Director Dutch Node and Professor of Public Sector Innovation at HAN University of Applied Sciences, NL  
Email: [frans.nauta@han.nl](mailto:frans.nauta@han.nl)
- II. Oliver Bücken, UnternehmerTUM GmbH, Munich, Head of Lectures & Seminars  
[buecken@unternehmertum.de](mailto:buecken@unternehmertum.de)
- III. Jean Jouzel (tbc), IPSL/ CEA, Governing Board, French node

### Time and Location

5 July, Paris

1. 14.15 h Innovation Policy in the US and in Europe
2. 15.15 h The Entrepreneurial Journey
3. 18 h Climate Challenges and Solutions

#### I. Innovation Policy in the US and in Europe (Frans Nauta)

1. Different countries have different approaches to creating innovation
2. The most famous example is Silicon Valley
3. Silicon Valley has what any politician dreams of:  
Excellent universities, spirited entrepreneurs, enormous revenues which in turn create enormous tax revenues
4. How is Europe trying to create innovative ecosystems, such as Silicon Valley?
5. Have a look at the EU strategy and how different countries translate them
6. So you as an entrepreneur learn where you can get the most bang for the government buck

#### II. The Entrepreneurial Journey (Oliver Bücken)

1. My personal entrepreneurial journey
2. Ideas versus Business opportunities
3. Ideas and market success – how many ideas make it to the customer?
4. How to start with an innovative idea?
5. Example: Entrepreneurial journey for Green Wing
6. Common misunderstandings on innovation
7. Tool to assess business opportunities

#### III. On Climate Change (Jean Jouzel, tbc)

<b>Title of Session: Radiative budgets &amp; greenhouse effect</b>	<b>Concise Information</b> <b>Assessing Climate Change and managing its drivers</b>
<b>Lecturer</b>	Name: H. Chepfer
<b>Time</b> 6-8 July, 9-17 (rotating classes) 6 July, 17-19: Lecture on Climate Change (for all students)	Email: <a href="mailto:chepfer@lmd.polytechnique.fr">chepfer@lmd.polytechnique.fr</a> Address: LMD/IPSL, Ecole Polytechnique, 91128 Palaiseau cedex
<b>Learning Outcome</b>	Understanding and measuring radiative budgets and greenhouse effect
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<p>Explain the radiative budget of the Earth and what is the greenhouse effect</p> <p>Highlight order of magnitudes and uncertainties on the radiative budget</p> <p>Point out what we know and do not know on climate change (introduce “climate feedback” and uncertainties)</p>
<b>Student Workload</b>	1 Day
<b>Teaching Method</b>	<p>Lecture: on radiative budget and greenhouse effect</p> <p>Work in 2 groups of 8 students: (1) Measure Shortwave and Longwave fluxes with SIRTa instruments; (2) Data analyses with computers, variations of fluxes (daily, seasonally, with latitude) and link with atmospheric variables (clouds, aerosols, greenhouse gases) and temperature.</p> <p>6 July, 17-19: Conference on “What we know and do not know on climate change” by S. Bony (IPSL) Co-chair of WGCM/WMO and lead author of Chapter 1, IPCC, AR4 report</p>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	<ul style="list-style-type: none"> <li>- PPT for lecture</li> <li>- Flipchart</li> <li>- Instrumental park of SIRTa site</li> <li>- Computers for data analyses</li> <li>- A document which summarizes Lecture and Group work will be distributed to students</li> </ul>
<b>Recommendation of Literature and other sources of information</b>	Will be included in the document which summarizes Lecture and Group work
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node in your session</i>	H. Chepfer , <a href="mailto:chepfer@lmd.polytechnique.fr">chepfer@lmd.polytechnique.fr</a> , 33-1-69-33-51-17
<b>Interaction with other R&amp;I themes</b> <i>Please indicate the themes your session refers to</i>	
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on in groups during the learning journey	

<b>Title of Session: Remote sensing &amp; regional climate modeling</b>	
<b>Concise Information</b> <b>Assessing Climate Change and managing its drivers</b>	
<b>Lecturer</b>	Name: S. Turquety
<b>Time</b> 6-8 July, 9-17 (rotating classes)	Email: solene.turquety@lmd.polytechnique.fr
7-8 July, 17-19 Ideas and opportunities (for all students/ with the coaches and entrepreneurs)	Address: LMD/IPSL, Ecole Polytechnique, 91128 Palaiseau cedex
<b>Learning Outcome</b>	Spatial and terrestrial monitoring, Numerical simulations
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<p>Explain the basic principles of passive and active remote sensing</p> <p>Highlight what ground-based and satellite remote sensing can and can not measure (particles, radiation, pollution, gases) - uncertainties</p> <p>Explain the basic principles of numerical simulation for atmosphere and pollution</p> <p>Highlight which regional-scale model simulations outputs are reliable and which are not (uncertainties)</p> <p>Inputs from companies producing satellite retrieval and/or instruments, and markets in this field</p> <p>Inputs with companies selling regional-scale model outputs and market in this field</p>
<b>Student Workload</b>	1 Day
<b>Teaching Method</b>	<p>Lecture: on Tools for climate studies (1) remote sensing (2) numerical simulations</p> <p>Work in 3 groups of 5 students on: (1) Measure atmospheric particles with SARTA lidars; (2) Measure atmospheric chemistry with IASI satellite (3) Simulate meteorology and chemistry with regional scale model</p> <p>Experimental work and SARTA and Data analyses on computers</p> <p>17-19: Idea generation and opportunity assessment with companies building space borne instrument, selling satellite retrievals, selling regional scale model simulations (jointly with coaches)</p>
<b>Teaching Media</b>	<ul style="list-style-type: none"> <li>- PPT for lecture</li> <li>- Flipchart</li> <li>- Instrumental park of SARTA site</li> <li>- Computers for data analyses</li> <li>- A document which summarizes Lecture and Group work will be distributed to students</li> </ul>

<b>Recommendation of Literature and other sources of information</b>	Will be included in the document which summarizes Lecture and Group work
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	S. Turquety , <a href="mailto:solene.turquety@lmd.polytechnique.fr">solene.turquety@lmd.polytechnique.fr</a> , 33-1-69-33-51-17
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	Will be addressed with the companies involved in the idea generation and opportunity assessment

<b>Title of Session</b> Wind and Solar Resource Assessment	<b>Concise Information</b> <b>Zero Carbon Production Systems</b>
<b>Lecturer</b>	Name: P. Drobinski
<b>Time</b> 6-8 July, 9-19 (rotating classes) 7-8 July, 17-19 Ideas and opportunities	Email: philippe.drobinski@lmd.polytechnique.fr Address: LMD/IPSL, Ecole Polytechnique, 91128 Palaiseau cedex
<b>Learning Outcome</b>	Wind and solar resources
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<p>Explain the key variables to characterize wind and solar radiation fields</p> <p>Highlight the order of magnitude and the natural variability of these key variables, depending on meteorological conditions and location</p> <p>Estimate wind and solar resources for a given site (SIRTA)</p> <p>Inputs with companies involved in the management of solar resources and in the measurement of wind resources</p>
<b>Student Workload</b>	1 Day
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )	<p>Lecture: on Wind and Solar Potential</p> <p>Work in 3 groups of 7 students on: (1) Measure wind potential at SIRTA; (2) Measure solar potential at SIRTA</p> <p>Experimental work and Data analyses on computers</p> <p>17-19 : Idea generation and opportunity assessment with companies involved in the management of solar resources and the measurement of wind resources (with coaches)</p>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	<ul style="list-style-type: none"> <li>- PPT for lecture</li> <li>- Flipchart</li> <li>- Instrumental park of SIRTA site</li> <li>- Computers for data analyses</li> <li>- A document which summarizes Lecture and Group work will be distributed to students</li> </ul>
<b>Recommendation of Literature and other sources of information</b>	Will be included in the document which summarizes Lecture and Group work
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node in your session</i>	P. Drobinski , <a href="mailto:philippe.drobinski@lmd.polytechnique.fr">philippe.drobinski@lmd.polytechnique.fr</a> , 33-1-69-33-51-17
<b>Interaction with other R&amp;I themes</b> <i>Please indicate the themes your session refers to</i>	Assessing Climate Change and Managing its drivers (measuring resources)
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey	Will be addressed with the companies involved in the idea generation and opportunity assessment



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## Title of Session

### Business Planning

## Concise Information

**Lecturer** Coaches (tbc)

Name:

**Date** 9 July, 9-11

Email:

Address:

### Learning Outcome

#### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

### Student Workload

#### Teaching Method *(objectives: learning by doing, contextual learning)*

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
*(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)*

In case of a site visit: appr. time for transfer from/ to sites

*(Timing should be tested beforehand, also against possible congestion times)*

#### Teaching Media *(objective: interactive teaching)*

- PPT
- Flipchart
- Other media

### Recommendation of Literature and other sources of information

### Country nodes involved

*Please give name, email and phone details of one contact person in each involved node **in your session***

### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

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**Title of Session:** So you want to be an eco-entrepreneur? Matching opportunity and capacity via industry assessment and self-assessment

## Concise Information Transitioning to Resilient Low Carbon Cities

### Lecturer

**Time** 9 July, 11-18 , Paris

Name: K. Culver

Professor and Econoving International Chair in Generating Innovation

Email: keith.culver@universud-paris.fr

Address: University of Versailles Saint-Quentin-en-Yvelines, Bureau 305 Batiment d'Alembert, 5-7 boulevard d'Alembert, 78047 Guyancourt Cedex, FRANCE

Session to be held at the Guyancourt campus of the University of Versailles Saint-Quentin-en-Yvelines:

- Morning blocs 1 and 2 devoted to observation of final eco-city project presentations of graduating Econoving Master in Management of Eco-Innovation.
- Afternoon blocs 1 and 2 devoted to group evaluation and development of selected elements of students' analyses of industries offering eco-innovation opportunities, and self-evaluations assessing student readiness to take advantage of opportunities identified.

### Learning Outcome

Outcomes 1 and 4: (1) understanding of entrepreneurship in Europe and (4) development and delivery of ideas, products and services in the context of cities and their resilience to climate change.

### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

It almost goes without saying that successful entrepreneurship requires more than the right attitude and a new idea. Yet more often than not new entrepreneurs fail despite having the right attitude and a new idea. This unhappy fact raises an important question: is there anything you, as a potential eco-entrepreneur, might do to improve the likelihood that you will succeed?

This session focuses on what might be called exploratory strategic aspects of the relation between the Climate KIC Master Summer School focal problem, and your consideration of whether you will take up the challenge and opportunity of eco-entrepreneurship using what you learn in this Summer School. We will do so in two parts in our limited time together, each part aiming to contribute to two learning themes: 'learning by doing,' and 'from science to business.'

First, you will gain a sense of what might be done in a team-driven approach to eco-entrepreneurship over the course of a Master's degree. You will observe the final, end-of-year presentations and evaluation of two simulated consulting firms – UVSQ Econoving Master students -- who have worked since last September to develop a strategy and implementation plan for their host city, Saint Quentin-en-Yvelines, the leading European generator and user of innovations.

Second, prior to our day together you will design and to the extent possible conduct an industry analysis in the Summer School focal topic of greatest interest to you. This analysis will develop your understanding of the industry into which you aim to enter. At the same time, you will conduct an 'entrepreneurial readiness' exercise in which you assess your own preparedness to become an entrepreneur. Third, you will write a brief action-plan describing how you will gain skills, partnerships, and take other steps to enter what you identify as a market opportunity. In class we will work together to evaluate a few pre-selected industry and self-analyses, aiming to improve our ability to develop individual plans of action to take up innovation opportunities with the right blend of knowledge, skills, and partnerships.

Goals: To learn to identify innovation opportunities and to conduct realistic self-assessment of your own readiness to identify gaps or blocks between us and the opportunities we wish to take up, and to form

reasonable expectations regarding the kinds of outcomes achievable in the context of Master's study. This exploration will lead individual members of the class to identify areas of personal strength and relative weakness, further enabling students to make choices in the remainder of the study which will enable them to improve where they are relatively weak, and to focus their abilities and skills to best effect. This short-course presumes that students are actively considering the possibility of becoming entrepreneurs, or otherwise engaged with entrepreneurs in an innovation-oriented area of environmental research, development, demonstration and systematic implementation.

### Student Workload

In the first part of your day with the Econoving programme in Paris, your observation of graduate Econoving Master students' presentations will be aided by pre-circulated materials outlining presentations. These materials will be sent to you approximately one week prior to our day.

In the second part of your day with us, the instructor will work with you to examine selected strengths and self-assessments to demonstrate and explore the value of thinking carefully and critically about industries and personal capacities *before* committing to a career of entrepreneurship taking results from lab bench to commercial application.

#### 1. Industry analysis

For the first part of your three-part submission to the instructor, you will provide an industry analysis of no more than 5 pages double-spaced, exclusive of properly formatted references, in grammatically sound English. The industry you select for analysis should be an industry contributing to the products, processes, and policies needed to resolve central issues in the problem addressed by the Climate KIC summer school. Your industry analysis need not be comprehensive: it is sufficient that the industry analysis be a beginning, identifying the research methods you would choose to conduct such an analysis, and providing results of preliminary investigation, which you will continue during your Master degree study. Your industry analysis should be guided by the following classic reading and methods:

Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: Free Press, 1980, reprinted 2004), Appendix B "How to Conduct an Industry Analysis."

You may find it useful when thinking about industry analysis in the context of eco-innovation to consult one or both of two recent works in eco-innovation:

J. Carillo-Hemosilla, P del Rio Gonzalez and T Konnola, *Eco-Innovation: When Sustainability and Competitiveness Shake Hands* (Basingstoke: Palgrave-McMillan, 2009).

OECD, *Eco-innovation in Industry: Enabling Green Growth* (Paris: OECD, 2010), available free online at

[http://www.oecd.org/document/34/0,3343,en\\_2649\\_34173\\_44416162\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/34/0,3343,en_2649_34173_44416162_1_1_1_1,00.html)

#### 2. Self-assessment

For the second part of your two-part submission to the instructor, you will complete, print, scan, and send to the instructor a completed entrepreneurial self-assessment we will borrow from the Business Development Bank of Canada. The survey is available online, free of charge, here: [http://www.bdc.ca/en/business\\_tools/entrepreneurial\\_self-Assessment/Entrepreneurial\\_self\\_assessment.htm?cookie\\_test=1](http://www.bdc.ca/en/business_tools/entrepreneurial_self-Assessment/Entrepreneurial_self_assessment.htm?cookie_test=1)

#### 3. Integration of industry analysis and self-assessment.

The final, and most difficult task, is to bridge the gap between your present capacities and opportunities to become an entrepreneur in industry. You need a plan, and this course is a place to begin the ongoing process of thinking about the elusive question of 'fit' between your opportunities to translate science into marketplace success. Your plan should take the form of a two-page, double-spaced, coherent, mutually reinforcing set of actions. It may be helpful to structure this set of actions as a flow-chart indicating how you plan to develop your skills or relationships with e.g., finance partners, and just as importantly, how you might adjust your plan if circumstances change.

change, e.g., loss of a private sector financial partner. This is an excellent opportunity to do desktop research to become familiar with financial and institutional supports for innovative entrepreneurs in your home country, and at European level.

All three assignments are to be sent by email to the instructor in Word or PDF format in a size clearly labeled with your name and the phrase 'Climate KIC summer school 2010', by 16h30 local time, Friday July 2, 2010. Students whose assignments are selected for discussion in class will be notified of this fact in advance. Authors of assignments discussed in class will not be identified personally during discussion, and all discussion will be aimed at constructive criticism enabling authors and observers to think more deeply and effectively about preparing for entrepreneurial careers in Europe. Constructive criticism may be clear and firm, but the instructor will take pains to avoid embarrassing students – our goal is to increase the likelihood of students becoming successful entrepreneurs, not to discourage students.

### Teaching Method

(objectives: learning by doing, contextual learning)

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)

In case of a site visit:  
appr. time for transfer from/ to sites  
(Timing should be tested beforehand, also against possible congestion times)

### Teaching Media

(objective: interactive teaching)

- PPT
- Flipchart
- Other media

The first part of the sessions will be observational, allowing students to see what Master students completing their degree have managed to achieve in group work to develop an eco-innovation strategy. Observing these students will help Climate KIC students to gain a sense of the level of expertise and job-readiness they may achieve by the end of Master degree study. The second part of the session will be delivered as an instructor-led, group discussion of several student assignments submitted well prior to the session. While it is desirable that each student should receive personalized attention regarding his or her industry analysis and self-evaluation, time is short, and a model for integration of industry-assessment and self-assessment can be adequately demonstrated by in-class integration and evaluation of a few representative assignments. These assignments and activities will help students to become appropriately pragmatic in identifying entrepreneurial opportunities most appropriate to their aptitudes.

Students will observe a PPT-supported presentation of work by Econoving students, and will be engaged in PPT-assisted whole-group and small-group discussion of their pre-submitted industry analyses and self-evaluations. Pre-circulation of materials and pre-submission of initial work on those materials will promote a highly interactive day of discussion and analysis.

### Recommendation of Literature and other sources of information

Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: Free Press, 1980, reprinted 2004), Appendix B "How to Conduct an Industry Analysis."

J. Carillo-Hemosilla, P del Rio Gonzalez and T Konnola, *Eco-Innovation: When Sustainability and Competitiveness Shake Hands* (Basingstoke: Palgrave-McMillan, 2009).

OECD, *Eco-innovation in Industry: Enabling Green Growth* (Paris: OECD, 2010), available free online at

[http://www.oecd.org/document/34/0,3343,en\\_2649\\_34173\\_44416162\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/34/0,3343,en_2649_34173_44416162_1_1_1_1,00.html)

### **Country nodes involved**

*Please give name, email  
and phone details of one  
contact person in each  
involved node **in your  
session***

### **Interaction with other R&I themes**

*Please indicate **the  
themes your session  
refers to***

### **Grand Challenges**

Please suggest  
project(s) for student  
groups to work on **in  
groups** during the  
learning journey  
*(In 2010 there will be no  
research report, so the  
project is the R&I base for  
the work on the business  
plan)*

Title of Session Carbon accounting & products	Concise Information
<b>Lecturer</b> <b>Time</b> 12 July, 9-13 Followed at 14-16 by coached project work	Name: P. Ciais / M. Minnock / L. Rivier / J.D. Paris / P. Bousquet Email: <a href="mailto:Philippe.ciais@lsce.ipsl.fr">Philippe.ciais@lsce.ipsl.fr</a> <a href="mailto:mary.minnock@lsce.ipsl.fr">mary.minnock@lsce.ipsl.fr</a> <a href="mailto:philippe.bousquet@lsce.ipsl.fr">philippe.bousquet@lsce.ipsl.fr</a> Address: LSCE, CEA Saclay, Orme des Merisiers, bat 701, F-91191 Gif sur Yvette
<b>Learning Outcome</b>	Understanding carbon accounting question, Creative thinking on carbon products
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> </ul>	The students will receive inputs on : Observing atmospheric greenhouse gases in real time, Inferring regional carbon fluxes from atmospheric observations, existing carbon products & services. Creating thinking in small groups on some topics among: <ul style="list-style-type: none"> <li>• Identifying the needs of policy-makers</li> <li>• Evaluating how requirements may change in an evolving world</li> <li>• Highlighting possible improvements in existing carbon products,</li> <li>• Defining new carbon products &amp; services,</li> <li>• Identifying new markets for carbon products</li> </ul> They will have to summarize their ideas, present them to the whole group and discuss with the ICOS team (Integrated Carbon Observation system is an ESFRI infrastructure project to continuously monitor carbon in Europe on the long term)
<b>Student Workload</b>	½ day
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> </ul>	1h introduction on GHG observations, flux estimations and existing carbon products, with demonstration of real time CO <sub>2</sub> observations 1h30 group work to brainstorm on carbon products, services & market 1h restitution & discussion with the ICOS team

<ul style="list-style-type: none"> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)</li> </ul>	Participation of scientists from ICOS, of a marketing consultant and of industrials (THALES, NOVELTIS) to coach the group work and participate to the following discussion
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	
<b>Recommendation of Literature and other sources of information</b>	<a href="http://www.icos-infrastructure.eu">http://www.icos-infrastructure.eu</a>
<b>Country nodes involved</b>  <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	Paris – <a href="mailto:mary.minnock@lsce.ipsl.fr">mary.minnock@lsce.ipsl.fr</a>  33 1 69 08 34 07
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Carbon trading and management (LCC, ZCPS)
<b>Grand Challenges</b>  Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	
<b>Carbon accounting:</b>  One KIC project is to permit the interpretation of data to provide a tool to assist with regional to local decision-making in order to contribute to policies aimed at reducing carbon emissions. This involves an in-depth assessment of data, its treatment and model outcomes as well as a correlation of this information with practical user needs.  Students will be asked to contribute to the development of this project: <ul style="list-style-type: none"> <li>• How to account for carbon fluxes at various scales (local, regional, national)?</li> <li>• What are the possible markets associated to the different scales?</li> <li>• What carbon products could be developed for these markets?</li> </ul>	



# Paris 12 July 14-16 Coached Project Work

Title of Module: Coached Project Work	Ongoing Module
<b>Coaches</b>	Names: a) Susanne Steiner, TU Berlin, Germany; b) L. C. Kruijne, Universiteit Utrecht, NL
<b>Date and Place</b> July/ August, 2010	Emails: a) <a href="mailto:susanne.steiner@tim.tu-berlin.de">susanne.steiner@tim.tu-berlin.de</a> ; b) <a href="mailto:L.C.Kruijne@uu.nl">L.C.Kruijne@uu.nl</a>  Address of respective institution: a) TU Berlin, Strasse des 17. Juni 135, H71, 10623 Berlin (Germany) b) Janskerkhof 12, 3512 BL, Utrecht (The Netherlands)
<b>Thematic area</b>	Business plan coaching

## Role of the coaches

- Coaching multidisciplinary teams in the process of designing a viable business concept by:
  - Providing regular guidance in business planning process and entrepreneurship input
  - Getting together with the teams to reflect the lectures, connect content and ensure the entrepreneurial outreach
  - Assessing the status of the teams' information on sectors/ markets
  - Guiding teams from ideas to full business plans through intermediate deliverables

## Learning Outcome

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>5. Common understanding of climate change issues in Europe and entrepreneurship (knowledge)</li> <li>6. Ability to understand, design and execute research at Master and PhD level resp. (research) – <i>less relevant at summer school</i></li> <li>7. Ability to communicate about climate change causes, consequences and solutions (outreach)</li> <li>8. To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&amp;I</li> </ol> | <ol style="list-style-type: none"> <li>1) The business plan coaches will facilitate the students' common understanding of climate change issues in Europe and entrepreneurship by bringing together every day's input and answering questions on potential entrepreneurial approaches</li> <li>2) The students will be supported in the process of researching and assessing markets (and gathering and evaluating data)</li> </ol> |
|---|---|



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programmes (application)

- 3) The students will be supported in the process of analyzing the status quo, identifying gaps and designing novel approaches to prevent or mitigate Climate Change
- 4) The students will be coached through the process of idea generation and team building

### Summary abstract of the sessions

A number of project work (coached) sessions have been planned. In these sessions teams can work together towards their business plan and coaches are available to help teams. Short plenary sessions will address issues that concern all teams,

**Student Workload** – building slowly and steadily up towards the end of the journey

Appr. 10 full days for the coached project work

### Teaching Method *(objectives: learning by doing, contextual learning)*

- |  |    |  |
|--|----|--|
| - Plenary sessions (h)   | -> | - to resolve common problems and challenges  |
| - Group tutorials (h )   | -> | - to address group-specific topics and work on building a concept based on an initial idea/ opportunity  |
| - Individual mentoring (h )  | -> | - to mentor individuals with view to their personal entrepreneurial profile (as required)  |
| - Interim presentation (h )  | -> | - to assess how convincing their value offering is to prospective clients and investors  |
| - Deliverables by certain deadlines )                                | -> | Deliverables   |
| - Interaction with local coaches (for local and logistical support ) | -> | In order to ensure teams work towards a full business plan there are a number of intermediary deliverables that need to be handed in to coaches: <ul style="list-style-type: none"><li>o A product/service description to convince customers</li><li>o A business model that adds to the product/service first findings on marketing, organization and finance</li><li>o An initial business plan presentation making a convincing argument for the business model</li><li>o A full draft business plan to be reviewed by peers</li><li>o A final business plan and presentation</li></ul> |

### Teaching Media *(objective: interactive teaching)*

- Whiteboard
- Flipchart
- Small tasks/ deliverables
- Beamer

<b>Recommendation of Literature and other sources of information</b>	<ul style="list-style-type: none"> <li>- New Venture Creation (Timmons &amp; Spinelli, 8th ed.)</li> <li>- StartingUp – Achieving Success with Professional Business Planning</li> <li>- Financial model template (Excel file)</li> </ul> <p>Online resources:</p> <ul style="list-style-type: none"> <li>- <a href="http://www.hurdlebook.com/">http://www.hurdlebook.com/</a></li> <li>- <a href="http://businessmodelgeneration.com/">http://businessmodelgeneration.com/</a></li> </ul>
<b>Country nodes involved</b>	<p>Germany, TU Berlin and The Netherlands, Universiteit Utrecht.</p>
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	<p>(continuous)</p>
<b>Grand Challenges</b> <p>Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey  <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i></p>	

<b>Title of Session</b> Prototyping and Intellectual Property	<b>Concise Information</b> <b>Entrepreneurship module</b>
<b>Lecturer</b>	Name: Penin
<b>Date</b> 12 July, 16-18	Email:
	Address: Paris

**Learning Outcome**

**Summary abstract of the session**

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

**Student Workload**

**Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)

In case of a site visit: appr. time for transfer from/ to sites  
(Timing should be tested beforehand, also against possible congestion times)

**Teaching Media** (*objective: interactive teaching*)

- PPT
- Flipchart
- Other media

**Recommendation of Literature and other sources of information**

**Country nodes involved**

Please give name, email and phone details of one contact person in each involved node **in your session**

**Interaction with other R&I themes**  
Please indicate **the themes your session refers to**

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
(In 2010 there will be no research report, so the project

## Title of Session

Introduction to marketing

## Concise Information

### Entrepreneurship module

#### Lecturer

Name: coaches (tbc)

Date 13 July, 9-11

Email:

Address:

## Learning Outcome

### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

## Student Workload

### Teaching Method *(objectives: learning by doing, contextual learning)*

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
*(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)*

In case of a site visit: appr. time for transfer from/ to sites

*(Timing should be tested beforehand, also against possible congestion times)*

### Teaching Media *(objective: interactive teaching)*

- PPT
- Flipchart
- Other media

## Recommendation of Literature and other sources of information

### Country nodes involved

*Please give name, email and phone details of one contact person in each involved node **in your session***

### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

## Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project*

Title of Session Eco-design of buildings and infrastructure	Concise Information <b>Transitioning to Resilient Low Carbon Cities</b>
<b>Lecturers</b>  <b>Time:</b> 13 July, 11-18	<b>Name:</b> Bruno Peuportier & Claus Stefan  <b>Email:</b> <a href="mailto:bruno.peuportier@mines-paristech.fr">bruno.peuportier@mines-paristech.fr</a> & <a href="mailto:claus.steffan@tu-berlin.de">claus.steffan@tu-berlin.de</a>  <b>Address:</b> MINES ParisTech, CEP 5 rue Léon Blum, 91120 Palaiseau, France  <b>Address:</b> Berlin Institute of Technology School of Planning Building Environment Department of Architecture Chair of Building Technology and Architectural Design; Strasse des 17. Juni 152 D-10623 Berlin Germany
<b>Learning Outcome</b>	
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled :</li> <li>- (conflicting) solutions to challenges addressed :</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities :</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	This theme will consist of two strands:  Energy and buildings by Claus Stefan,  Eco-design of buildings and city districts by Bruno Peuportier  Potential of CO <sub>2</sub> – reduction by optimization of low energy and low impact buildings, street, open spaces. Climate zones and architectural designs; Relation Urban form and building type; Winter Case (Heating); Summer Case (Cooling)  Design tools at urban scale
<b>Student Workload</b>	
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h) :</li> <li>- Assignment/ Group work (h) :</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) : (<i>We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme</i>)</li> </ul> In case of a site visit: appr. time for transfer from/ to sites : ( <i>Timing should be tested beforehand, also against possible congestion times</i> )	
	2 x 1 h 2h site visit 3h 1h
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	
<b>Recommendation of Literature and other sources of information</b>	
<b>Country nodes involved:</b>	<b>Germany and France</b>

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Please give name, email and phone details of one contact person in each involved node **in your session**

Steffan +49 30 31423301

Peuportier +33 1 69194232

### Interaction with other R&I themes

Please indicate **the themes your session refers to:**  
**energy efficiency, carbon footprint**

Topic to be co-ordinated with ETH Zurich

### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)

From the optimized building to the low-Carbon City (Policy)

Renewable energies in architecture (new products)

*Reduction of CO2 emissions in a dwelling*

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Title of Session: Ideas Pitch		Concise Information
<b>Coaches</b>		Name: Susanne Steiner and Codrin Kruijine
<b>Time</b> 14 July, 9-open end), Paris		
15 July, 9-11: coaching for the new groups		
<b>Learning Outcome</b>		
<b>Summary abstract of the session</b>		
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>		<p>Conflicts will arouse and should be solved within the teams</p> <p>ideation</p>
<b>Student Workload</b>		
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )		
<ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li> </ul>		<p>1h short intro to Pitches and pitfalls in Teambuilding</p> <p>If teambuilding is done quickly, I do one or two team role games. If time at the afternoon is permitted I would do a self perception test of team roles.</p> <p>Prepare individual vernissage before 14<sup>th</sup> July (ppt will be send by me before hand or presented on the very first day, the 5<sup>th</sup> July)</p>
In case of a site visit: appr. time for transfer from/ to sites		
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )		
<ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>		<p>PPT</p> <p>Flipchart</p> <p>Mood boards or movable walls</p>
<b>Recommendation of Literature and other sources of information</b>		Katzenbach/Smith (2006): The wisdom of teams or Katzenbach/Smith (2005): The discipline of teams, HBR
<b>Country nodes involved</b>		See above
<i>Please give name, email and phone details of one contact person in each involved node in your session</i>		
<b>Interaction with other R&amp;I themes</b> <i>Please indicate the themes your session refers to</i>		Kick-off 5 <sup>th</sup> July; idea generation 7 <sup>th</sup> and 8 <sup>th</sup> July
<b>Grand Challenges</b>		
Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey		

<b>Title of Session</b> Water re-use in agriculture and urban context	<b>Concise Information</b> <b>Adaptive Water Management</b>
<b>Lecturer</b> <b>Time</b> 15/ 16 July, 11-18 (rotating classes) (preceded on 15 July, 9-11 by coaching)	Name: Isabelle VENDEUVRE Email: Isabelle.VENDEUVRE@suez-env.com Address: DORE / Suez Environnement 38 rue du Président Wilson - 78230 Le Pecq - France
<b>Learning Outcome</b>	Understanding of issues related to the impacts of climate change on water resources, and opportunities for innovative treatment and uses (knowledge & application)  Ability to communicate about the consequences climate change causes, consequences and solutions (outreach)
<b>Summary abstract of the session</b>  1. major climate challenges tackled 2. (conflicting) solutions to challenges addressed 3. indication of knowledge gaps, knowledge leaps, market gaps and opportunities 4. indication of links to other R&I themes where appropriate	The session examines the issues related to water use by agriculture and urban activities in the context of climate change, and how treated wastewater may be 're-used' to expand water resources and meet demands from agriculture and urban areas. Innovative technologies for treatment and re-use, and market opportunities will be developed via case-studies.
<b>Student Workload</b>	One-day session, including personal work.
<b>Teaching Method</b>	1) Lecture (3 h), including input from practitioners in business sector (Suez) 2) Group work on case-studies, and presentation of results (3h)
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )  1) PPT 2) Flipchart 3) Other media	- Slides - Case-studies ( Flipchart )
<b>Recommendation of Literature and other sources of information</b>	Molden, D. (ed), Water for food, water for life, IWDR1 (2007) - in particular Chapter 11. <a href="http://www.iwmi.cgiar.org/Assessment/Publications/books.htm">www.iwmi.cgiar.org/Assessment/Publications/books.htm</a>
<b>Country nodes involved</b>  <i>Please give name, email and phone details of one contact person in each involved node in your session</i>	France: Isabelle VENDEUVRE
<b>Interaction with other R&amp;I themes</b> <i>Please indicate the themes your session refers to</i>	Adaptative water management
<b>Grand Challenges</b>  Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey	Development of project for water re-use in a particular urban context



<b>Title of Session</b> Introduction to finance	<b>Concise Information</b> <b>Entrepreneurship module</b>
<b>Lecturer</b>	Name: coaches or Buijs (tbc)
<b>Date</b> 16 July, 9-11	Email:
	Address:
<b>Learning Outcome</b>	
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	
<b>Student Workload</b>	
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )	
<ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li> </ul>	
<p>In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)</p>	
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	
<ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	
<b>Recommendation of Literature and other sources of information</b>	
<b>Country nodes involved</b>	
<i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	
<b>Grand Challenges</b>	
<p>Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</p>	

Title Low-carbon agriculture in urban context	Concise Information Zero Carbon Production Systems
<b>Lecturer</b>  <b>Time</b> 16 July, 11-18 (rotating with 15 July) (after Introduction to Finance, 16 July 9-11)	Name: Benoît GABRIELLE  Email: Benoit.Gabrielle@agroparistech.fr  Address: UMR INRA AgroParisTech EGC 78850 Thiverval-Grignon France
<b>Learning Outcomes</b>	Understanding of issues related to the role of agriculture in climate change and opportunities for GHG mitigation and production of services, in urban context (knowledge & application)
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>major climate challenges tackled</li> <li>(conflicting) solutions to challenges addressed</li> <li>indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>indication of links to other R&amp;I themes where appropriate</li> </ul>	Ability to communicate about the role of agriculture in climate change, mitigation options for this sector and renewable energy solutions in particular based on biomass (outreach) The session examines the issues related to the role of agricultural production systems (arable and livestock) in climate change, and how innovative management options new productions and services may mitigate GHG emissions in urban context. Innovative technologies for food, feed, & energy production, and urban waste recycling will be emphasized in a farm tour and developed via case-studies and practitioners' inputs. There will be links with the C monitoring systems (Climate drivers) and water use in agriculture (AWM).
<b>Student Workload</b>	One-day session, including group work.
<b>Teaching Method</b>	<ul style="list-style-type: none"> <li>Lecture (1 h), field tour of Grignon farm (2h)</li> <li>Group work on case-studies, and presentation of results (2h)</li> <li>Input from practitioners in the banking sector (Crédit Agricole, 1h)</li> </ul>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"> <li>PPT</li> <li>Flipchart</li> <li>Other media</li> </ul>	<ul style="list-style-type: none"> <li>Slides</li> <li>Case-studies ( Flipchart )</li> <li>Farm tour with stops showcasing mitigation options and new production systems</li> </ul>
<b>Recommendation of Literature and other sources of information</b>	<a href="http://www.agroparistech.fr/energiepositive/-English-version-.html">http://www.agroparistech.fr/energiepositive/-English-version-.html</a>
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node in your session</i>	France: Benoît GABRIELLE (WUR to be contacted)
<b>Interaction with other R&amp;I themes</b>	ZCPS
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	Design a zero-carbon farm making the most of urban / agriculture interactions while enhancing ecosystem services (waste and nutrients recycling, production of renewable energy, food, feed, fibre & chemicals, landscape quality, etc..) in a particular context.

17 July 8.07 am

Eurostar to London

Arrival 9.36 am and check-in to London  
accommodation

Free weekend

Title of Session		Concise Information	
Insurance and capital market solutions			
<b>Lecturer</b>		Name: <b>Enrico Biffis</b>	
Time: 19 July, 9-18		Email: e.biffis@imperial.ac.uk	
		Address: Imperial College London, Business School, South Kensington Campus, London SW7 2AZ, United Kingdom	
<b>Learning Outcome</b>		Risk sharing tools, risk pricing and mitigation: From carbon trading to extreme weather events	
<b>Summary abstract of the session</b>			
<ul style="list-style-type: none"><li>- major climate challenges tackled</li></ul>		Extreme weather events, carbon management	
<ul style="list-style-type: none"><li>- (conflicting) solutions to challenges addressed</li></ul>		Risk sharing / mitigation, insurance solutions, carbon trading	
<ul style="list-style-type: none"><li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li></ul>		Limited capacity of (re)insurance markets, lack of long-term risk-sharing vehicles for cat risks. Opportunities for public-private partnerships, monitoring technology (sensor networks, satellite), risk mitigation systems, carbon trading systems	
<ul style="list-style-type: none"><li>- indication of links to other R&amp;I themes where appropriate</li></ul>		Extreme weather events/flood modeling, risk mitigation (AWM), carbon trading and management (LCC, ZCPS)	
<b>Student Workload</b>		1 day	
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )		9.00 – 9.30 Welcome	
<ul style="list-style-type: none"><li>- Lecture (h)</li></ul>		A. George EU/UK government representative	
<ul style="list-style-type: none"><li>- Assignment/ Group work (h)</li></ul>		9.30 – 10.15 Climate Change Research at the London node . Speaker : B. Hoskins	
<ul style="list-style-type: none"><li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)</li></ul>		10.15 – 11.00 Challenges in Climate Change Speaker: TBC	
		11.30 – 12.45 Carbon Trading/Insurance	
		E. Biffis, ECX representative (emissions markets)	
		Representative of major global hedge fund (soft commodities and climate change)	
		Lloyd's of London representative (Climate change and emerging risks)	
		12.45 – 13.15 Lunch	
		13.15 – 14.00 Travel to City (Underground)	
		14.00 – 15.15 Willis headquarters	
		Speakers from Lloyds Syndicates, reinsurers, ILS funds (15 mins each talk)	
		15:30 - 16:30 Lloyd's of London (visit to trading floor, talks by Lloyds representative)	
		16.15 – 17.00 Return to Imperial College (Underground)	
		17.00 – 18.00 Debrief	
		Speakers: Investment bank representative (Climate change and alternative asset classes)	
		E. Biffis (wrap up and discussion of HBS case	
In case of a site visit: appr. time for transfer from/ to sites			

(Timing should be tested beforehand, also against possible congestion times)

study)

2 x 40 mins =1h 20m

### Teaching Media (objective: interactive teaching)

- PPT
- Flipchart
- Other media

PPT

### Recommendation of Literature and other sources of information

#### Country nodes involved:

Please give name, email and phone details of one contact person in each involved node **in your session**

London - Biffis (as above; tel +44207594 9767)

### Interaction with other R&I themes

Please indicate **the themes your session refers to**

#### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)

**Risk mitigation.** How to quantify the effects of new climate change technology (satellite observation, sensor networks, engineering measures, etc.) on insurance capacity and risk pricing in capital markets. How to use insurance/capital markets to quantify the market potential of a new technology/solution.

**Risk-sharing.** Design innovative risk-sharing arrangements that ensure resilience to extreme events and supply of long-term coverage. For example: new ways to use public-private partnerships and technology for long-term risk-sharing; design new capital market instruments or loss-financing solutions. How to cope with the unevenness in the exposure of countries/industries/households to the effects of climate change, and in their ability to recover from catastrophic events.

**Carbon management.** How to assess the trade-offs between different carbon management options. How to use market-implied information, how to allow for regulatory risk and for uncertainty in supply-demand and regulatory risk when selling/adopting a new solution to reduce carbon emissions.

Title of Session: Introduction to Strategy	Concise information
<b>Lecturer</b>	Name: Ebrahim Mohamed
<b>Date and Place</b>	Email: e.mohamed@imperial.ac.uk
July 20 2010	Address: Imperial College Business School, Exhibition Road, London, SW7 2AZ
9-11 London	
<b>Thematic area</b>	Entrepreneurship, Strategy

### Learning Outcome

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

- Common understanding of climate change issues in Europe and entrepreneurship (knowledge)
- Ability to understand, design and execute research at Master and PhD level resp. (research) – *less relevant at summer school*
- Ability to communicate about climate change causes, consequences and solutions (outreach)
- To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&I programmes (application)

In this session, students will learn the following:

1. Tools for industry analysis
2. Porter's 5 Forces and 'Diamond'
3. Frameworks used for assessing competitive advantage
4. Core competencies
5. Strategic implementation frameworks

### Summary abstract of the session:

The ability to analyse an industry is important in the entrepreneurial journey as a value proposition needs to be viable in a commercial context. This understanding of the external context is critical if an entrepreneur is to identify a commercially viable idea. The standard tools for industry analysis will be considered with an applied focus on the sustainability and climate change arenas. The nuances of competitive advantage will be illustrated with the use of case examples to develop an understanding of how these could be cultivated for long term commercial success.

Equally important to the understanding of the competitive environment (external context) an appreciation of the unique internal qualities of a firm, are important. These qualities referred to as core competences will form the basis to defining a successful value proposition.

Perhaps more important than the strategy (plan) is the implementation (execution) and the session will illustrate this through case examples to illustrate this fundamentally important issue.

### Student Workload – 2 hours

**Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (h)

**Teaching Media** (*objective: interactive teaching*)

- PPT
- Flipchart

### Recommendation of Literature and other

Summary readings will be distributed.

## **sources of information**

<b>Country nodes involved</b>	United Kingdom, Imperial College, London
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Paris; Ideas and opportunities workshops (July 7,8), Prototyping and Intellectual Property (July 12)  London: Project/Service development (July 20, Strategy – Innovation and Technology (July 22), Marketing Strategy and Strategy (July 30)  Zurich; Marketing (August 3)

## **Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

# London 20 July, 11-16 Coached Project Work

<b>Title of Session:</b> Product/Service development	<b>Concise information</b>
<b>Lecturer</b>	Name: Ebrahim Mohamed
<b>Date and Place</b> July 20 <sup>th</sup> 2010 16-18 London	Email: e.mohamed@imperial.ac.uk  Address: Imperial College Business School, Exhibition Road, London, SW7 2AZ
<b>Thematic area</b>	Entrepreneurship, Strategy

## **Learning Outcome**

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

- Common understanding of climate change issues in Europe and entrepreneurship (knowledge)
- Ability to understand, design and execute research at Master and PhD level resp. (research) – *less relevant at summer school*
- Ability to communicate about climate change causes, consequences and solutions (outreach)
- To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&I programmes (application)

In this session, students will learn the following:

1. The Entrepreneurial Process
2. Value Creation
3. Opportunity, Resources and The Entrepreneurial Team
4. Opportunity Assessment
5. Value Chain Analysis
6. Defining a value proposition
7. The difference between product and service orientated entrepreneurship

#### Summary abstract of the session:

The identification of a commercial proposition can be facilitated through a series of analytical lenses that seek to identify the scope and value of the proposition without the need for full commitment of resources. There has to be a good balance between opportunity, resources and the entrepreneurial team. The session will use illustrating case studies to reveal the importance of this issue.

The ability to assess the feasibility of an idea using minimal resources is important in the entrepreneurial process and a check list model will be introduced to develop an ability to do such assessments.

Finally the session will consider the differences between product and/ or service orientated entrepreneurial projects and look at how a value proposition could be improved.

#### Student Workload – 2 hours

**Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (h)

**Teaching Media** (*objective: interactive teaching*)

- PPT
- Flipchart

#### Recommendation of Literature and other sources of information

Summary readings will be distributed.

#### Country nodes involved

United Kingdom, Imperial College, London

#### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

Paris; Ideas and opportunities workshops (July 7,8)

Prototyping and Intellectual Property (July 12)

London: Introduction to Strategy (July 20), Market research – Climate related (July 21), Strategy – Innovation and Technology (July 22), Marketing Strategy and Strategy (July 30)

Zurich; Marketing (August 3)

#### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
(*In 2010 there will be no research report, so the project is the R&I base for the work on the business plan*)



<b>Title of Session</b> <b>Molecules and Electrons</b>	<b>Concise Information</b> <b>Zero Carbon Production Systems</b>
<b>Lecturer</b> <b>Time 21 July, 9-16</b>	Name: Rocio Diaz-Chavez and Richard Murphy Email: r.diaz-chavez@imperial.ac.uk Address: Imperial College London
<b>Learning Outcome</b>	<p>The student will understand the opportunities of using biomass for energy and to make other chemical products in order to produce an integrated and sustainable biorenewable production system.</p> <p>The student will demonstrate the concepts of a biorenewable integration model through the development of a general proposal of a zero carbon production system.</p>
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<p><b>1.5r</b> Introduction to the design of systems that have zero or negative carbon emission and introducing the task that will be set for the students (to create ideas for a zero carbon production system). The presentations will be oriented to discuss whether to burn biomass for energy or use the molecules in the biomass to make products. This will provide the student with elements on to balance both to make an integrated and sustainable biorenewable production system. See timetable below.</p> <p><b>2 hr</b> Visit to Rothamsted experimental fields to see production of short rotation coppice (SRC) and the links with ZCPS and 2nd generation of biofuels.</p> <p><b>2 hr Dinner with two guest speakers.</b> The students will be introduced by entrepreneurs and research groups to a variety of technologies that might form elements of a zero carbon production system</p>
<b>Student Workload</b>	(
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li> </ul> <p>In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)</p>	<p>Lecture 2hr</p> <p>Visit 2 hours</p> <p>Debate with 2 invited speakers</p> <p>Short Assignment in groups 1 hrs</p>

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**Teaching Media** (objective: interactive teaching)

- PPT Slides
- Flipchart Field visit
- Other media Q&A for debate and round table

**Recommendation of Literature and other sources of information****Country nodes involved**

ZCPS Imperial College

Please give name, email and phone details of one contact person in each involved node **in your session**

R Diaz-Chavez and R Murphy

**Interaction with other R&I themes**

AWM

Please indicate **the themes your session refers to**

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)

Students to discuss in groups to propose a general biorefinary or ZCP system. The task is too big but the general objectives and ideas of integrating and considering wider sustainability issues and links with the other topics are the main contribution of the activity.

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Time	Speaker	Topic
10.00	Dr Angela Karp	Introduction to CBCC and Bioenergy
10.30	Dr Richard Murphy	Sustainable and 'zero carbon' biorenewable production systems'
11.00	Dr Rocio A Diaz-Chavez	Sustainability considerations on bioenergy
11.15	Dr Bruce Fitt	Climate change and diseases
11.30	Coffee	
11.45-12.15	Andrew Riche, Ian Shield	Energy crops
12.15-12.45	Jon Storkey, Ian Shield	Broadbalk
12.45-13.15	Jon Storkey	Park Grass
13.30-14.15	Lunch	
14.30	Return to IC	

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**Title of Session:**  
**Market Research – Climate related****Concise information****Lecturer**

Name: Ebrahim Mohamed

**Date and Place**

Email: e.mohamed@imperial.ac.uk

July 21, 16-18 London

Address: Imperial College Business School,  
Exhibition Road, London, SW7 2AZ**Thematic area**

Entrepreneurship, Strategy

**Learning Outcome**

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

In this session, students will learn the following:

- Common understanding of climate change issues in Europe and entrepreneurship (knowledge)
- Ability to understand, design and execute research at Master and PhD level resp. (research) – *less relevant at summer school*
- Ability to communicate about climate change causes, consequences and solutions (outreach)
- To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&I programmes (application)

1. The Market Research Process
2. Formulation of research proposals
3. Quantitative research methods
4. An introduction to surveys
5. Industry research
6. Qualitative research methods
7. Focus groups
8. Interviews
9. Analysis and discussion of the results
10. Application of the results to the company

**Summary abstract of the session**

Market research on the topic of climate change is becoming increasingly common thanks to growing international concern for the environment and what commerce is doing to combat a growing problem. Conducting market research involves employing both quantitative and qualitative research techniques. This session aims to give an overview of both and how they can be used effectively to investigate the markets position on climate change.

Understanding the market research process is key to a successful entrepreneurial project so the session will focus on the formulation of coherent market research specifically those related to climate change.

In order to undertake market research it is essential to have a theoretical and practical understanding of both qualitative and quantitative techniques and the ability to execute them in a successful fashion. There will be specific consideration of which techniques are most appropriate when dealing with climate change.

Finally the session will discuss how to analyze and interpret the results and what that could mean for the markets or consumers.

**Student Workload – 2 hours****Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (h)

**Teaching Media** (*objective: interactive teaching*)

- 
- PPT
  - Flipchart

**Recommendation of Literature and other sources of information**

Summary readings will be distributed.

**Country nodes involved**

United Kingdom, Imperial College, London

**Interaction with other R&I themes**

*Please indicate **the themes your session refers to***

Paris; Ideas and opportunities workshops (July 7,8), Prototyping and Intellectual Property (July 12)

London: Introduction to Strategy (July 20)  
Project/service development (July 20),  
Strategy – Innovation and Technology (22 July), Marketing Strategy and Strategy (July 30)

Zurich; Marketing (August 3)

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

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Title of Session		Concise Information	
Lecturer		Name: Kai Strunz	
Time 22 July, 9-16		Email: <a href="mailto:kai.strunz@tu-berlin.de">kai.strunz@tu-berlin.de</a>	
		Address:	
		Technische Universität Berlin Institute of Energy and Automation Technology Chair of Sustainable Electric Networks and Sources of Energy Einsteinufer 11 (EMH-1) 10587 Berlin, Germany	
Learning Outcome		Understand the challenge of the net integration of distributed energy resources	
Summary abstract of the session			
<ul style="list-style-type: none"><li>- major climate challenges tackled</li><li>- (conflicting) solutions to challenges addressed</li><li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li><li>- indication of links to other R&amp;I themes where appropriate</li></ul>		<ul style="list-style-type: none"><li>- securing future energy supply</li><li>- Clean electric energy conversion and delivery</li><li>- How can we integrate distributed energy resources such as small-scale generators and electric vehicles into the network?</li><li>- LCC: e-mobility and smart buildings, ACC: measuring renewable sources</li></ul>	
Student Workload			
Teaching Method (objectives: learning by doing, contextual learning)		1,5 h lecture: smart energy components and systems: from concept to realization	
<ul style="list-style-type: none"><li>- Lecture (h)</li><li>- Assignment/ Group work (h)</li><li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li></ul>		1,5 h assignment in small groups (groups of 3 possible?): Design of a virtual power plant that aggregates a set of distributed energy sources through communication technology for the purpose of assimilating the behavior of a large conventional power plant	
In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)		1,5 h discussions of problems, solutions, and business ideas developed in the group work	
		Practitioners: Areva and Vattenfall are being approached	
Teaching Media (objective: interactive teaching)			
<ul style="list-style-type: none"><li>- PPT</li><li>- Flipchart</li></ul>		<ul style="list-style-type: none"><li>- PPT</li><li>- Flipchart</li></ul>	
Recommendation of Literature and other sources of information			
Country nodes involved		Germany	
Interaction with other R&I themes		Low Carbon Cities	
Grand Challenges		The idea of the virtual power plant can be developed into a business plan project, both for the delivery of products and of services	
Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)			

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## Title of Session: Strategy - Innovation and Technology

## Concise Information Entrepreneurship module

### Lecturer

Name: van Dijk (tbc)

Date 22 July, 16-18 London

Email:

Address:

### Learning Outcome

#### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

### Student Workload

#### Teaching Method *(objectives: learning by doing, contextual learning)*

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
*(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)*

In case of a site visit: appr. time for transfer from/ to sites

*(Timing should be tested beforehand, also against possible congestion times)*

#### Teaching Media *(objective: interactive teaching)*

- PPT
- Flipchart
- Other media

### Recommendation of Literature and other sources of information

#### Country nodes involved

*Please give name, email and phone details of one contact person in each involved node **in your session***

#### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

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23 July 9-18

Coached Project Work

<b>Title of Session:</b> <b>Smart Urban Freight and Mobility</b>	<b>Concise Information</b> <b>Transitioning to Resilient Low Carbon Cities</b>
<b>Lecturers</b> <b>Time: 26 July, 9-18</b>	Prof John Polak, Dr Robin North
<b>Learning Outcome</b>	<p>An appreciation of the key issues in transitions to a low carbon urban mobility system, for both freight and passengers.</p> <p>Identification of business opportunities and areas for innovation in promoting the early adoption of key technologies (e.g. in the commercial transport sector).</p> <p>An understanding of the practical considerations around travel and transport where Carbon is not necessarily the only or major constraint.</p>
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<p>This session will introduce the challenges associated with urban mobility, the distribution of urban freight and the challenges associated with a “low carbon city”. In this there will be a focus on “e-Mobility” - electric vehicles and their supporting infrastructure.</p> <ul style="list-style-type: none"> <li>- Current management of traffic, transport and travel in major cities and the challenges of transitions (London as an example) (Dr Robin North, with Transport for London input).</li> <li>- Developments in electric vehicles and their applications in urban environments (TBC).</li> <li>- Opportunities for Smart Urban Mobility and challenges in a Low Carbon City (Prof John Polak).</li> <li>- Visit to Camden depot of UPS who operate a fleet of electric delivery vehicles (led by Dr Robin North, educational material from UPS Depot Manager and Vehicle Operations Group)</li> </ul>
<b>Student Workload</b>	
<b>Teaching Method</b> <i>(objectives: learning by doing, contextual learning)</i> <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  <i>(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</i></li> </ul>	<p>Lectures: total 3hrs</p> <p>Tutorial Exercises and group work: Total 4 hrs</p> <p>Site Visit: 2 hrs</p> <p>Site travel: 1hr each way - to be combined with an evening social event.</p>
In case of a site visit: appr. time for transfer from/ to	



sites

*(Timing should be tested  
beforehand, also against  
possible congestion times)*

**Teaching Media** *(objective:  
interactive teaching)*

- PPT
- Flipchart
- Other media

Students will observe a PPT-supported presentation and will be engaged in PPT-assisted whole-group and small-group discussion.

Interactive problems solving sessions will be supported by flip-charts and pre-printed material.

### **Recommendation of Literature and other sources of information**

**Country nodes involved**

UK

*Please give name, email and  
phone details of one contact  
person in each involved node **in  
your session***

**Interaction with other R&I  
themes**

None

*Please indicate **the themes  
your session refers to***

**Grand Challenges**

e-Mobility and Smart infrastructure

Please suggest project(s) for  
student groups to work on **in  
groups** during the learning  
journey

Other themes of interest:

*(In 2010 there will be no  
research report, so the project is  
the R&I base for the work on the  
business plan)*

Title of Session: Finance - Raising Financial Capital		Concise information
<b>Lecturer</b>		Name: Simon Stockley
<b>Date and Place</b>		Email: s.stockley@imperial.ac.uk
July 27 2010		Address: Imperial College Business School, Exhibition Road, London, SW7 2AZ
9-11 London		
<b>Thematic area</b>		Entrepreneurship, Finance

### Learning Outcome

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

- Common understanding of climate change issues in Europe and entrepreneurship (knowledge)
- Ability to understand, design and execute research at Master and PhD level resp. (research) – *less relevant at summer school*
- Ability to communicate about climate change causes, consequences and solutions (outreach)
- To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&I programmes (application)

In this session, students will learn the following:

- Appropriate sources of finance for given degrees of organizational and technological maturity
- How the Venture Capital industry works
- How to raise venture capital
- How to structure equity investments
- Methods for valuing early stage technology ventures
- How to negotiate with banks

### Summary abstract of the session:

A timely and adequate supply of financial capital is essential to the survival and growth of all technology ventures. In the majority of cases, high potential new ventures need to raise significant sums of risk capital (equity) from angel investors and/or venture capitalists.

This session will introduce students to the core concepts they will need to understand prior to approaching an equity investor.

### Student Workload – 2 hours

**Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (2h)
- 

**Teaching Media** (*objective: interactive teaching*)

- PPT
- Flipchart

<b>Recommendation of Literature and other sources of information</b>	Summary readings will be distributed.
<b>Country nodes involved</b>	UK, Imperial College, London
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Paris; Introduction to Finance (July 16) Zurich; Cleantech Venture Capital (August 10)
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	

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## 27 July 11-16: Coached Project Work

## Title of Session: Innovation and Entrepreneurship

## Concise Information Entrepreneurship module

### Lecturer

Name: Kleinknecht (tbc)

Date 27 July, 16-18 London

Email:

Address:

### Learning Outcome

#### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

### Student Workload

#### Teaching Method *(objectives: learning by doing, contextual learning)*

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
*(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)*

In case of a site visit: appr. time for transfer from/ to sites

*(Timing should be tested beforehand, also against possible congestion times)*

#### Teaching Media *(objective: interactive teaching)*

- PPT
- Flipchart
- Other media

### Recommendation of Literature and other sources of information

#### Country nodes involved

*Please give name, email and phone details of one contact person in each involved node **in your session***

#### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

Land use management and water resources	Concise Information
<b>Lecturer</b> <b>Time</b> 28 July 2010, 9-18 29 July 2010, 9-13	Name: Wouter Buytaert Email: w.buytaert@imperial.ac.uk Address: Skempton Building SW7 2AZ London, UK
<b>Learning Outcome</b>	Understanding and being able to design applications of new technologies, methods and concepts to manage land and water resources in an integrated and sustainable way. This topic underpins the earlier identified learning outcomes „room for rivers“, and „water and food“, as both require integrated land management to avoid resp. floods and other water related hazards, and water shortages.
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	Changes in future climate patterns may increase the risk for hydrological extremes, both floods and droughts. Integrated land management may play a fundamental role in mitigating these risks, by optimising water use (e.g., for biofuel crops) and improved water storage to mitigate both extremes. This session will introduce students to tools for integrated water management, with a particular focus on (1) flood modelling and real time forecasting (2) new technologies, tools and policy instruments for flood and drought mitigation and optimisation of water use.
<b>Student Workload</b>	1.5 day session
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  <i>(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</i></li> </ul> In case of a site visit: appr. time for transfer from/ to sites <i>(Timing should be tested beforehand, also against possible congestion times)</i>	<ul style="list-style-type: none"> <li>- 3 hour lecture and case studies on integrated land surface modelling (University of Reading);</li> <li>- site visit to the European Centre for Medium Range Weather Forecasting in Reading (ECMWF) with showcasing of applications (real time flood forecasting) and presentations of case studies. Approx. transfer time: 1 hour each way.</li> <li>- 1 hour interactive lecture on river restoration and flood mitigation (Neil McIntyre, Imperial College London)</li> <li>- 1 hour presentation and demonstration by DTI Group on desalinization technologies for irrigation (Mark Tonkin)</li> <li>- 1 hour interactive lecture on water management and policy (Eric Mostert, Technical University Delft)</li> </ul>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	PPT
<b>Recommendation of Literature and other sources of information</b>	To be confirmed

**Country nodes involved**

*Please give name, email and phone details of one contact person in each involved node **in your session***

The Netherlands. Eric Mostert, TU Delft, **Email:** [e.mostert@tudelft.nl](mailto:e.mostert@tudelft.nl)  
**Telephone:** +31 15 2787800

**Interaction with other R&I themes**

*Please indicate **the themes your session refers to***

The module will provide links with the ZCPS (particularly the theme of conflict of water use for biofuels and water production) and ACC (predicting the impact of climate change on water resources).

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

Develop a novel application of public domain forecasting data to support real-time water resources management in a sector of choice (e.g., urban flood risk, irrigation water provision, water supply)

29 July: 14-18 Coached Project Work

Title of Sessions: Marketing Strategy & Strategy		Concise Information
<b>Lecturer</b>		Name: Prof. J. Kratzer
<b>Date and Place</b>		Email: jan.kratzer@tu-berlin.de
July 30, 9-11, London: Marketing Strategy		Address: TU Berlin, Strasse des 17. Juni 135, H76, 10623 Berlin (Germany)
July 30, 16-18, London: Strategy		
<b>Thematic area</b>		Entrepreneurship, Marketing Strategy, Strategy

### Learning Outcome

How does this theme contribute to the overall learning outcomes of the contextual learning journey?

9. Common understanding of climate change issues in Europe and entrepreneurship (knowledge)
10. Ability to understand, design and execute research at Master and PhD level resp. (research) – *less relevant at summer school*
11. Ability to communicate about climate change causes, consequences and solutions (outreach)
12. To develop and deliver ideas, products and services in response to climate challenges esp. related to the KIC R&I programmes (application)

### Session 1: Marketing Strategy

- The students will be enabled to analyze problems and define required improvements for marketing issues around entrepreneurial activities
- The students will be enabled to formulate a marketing strategy in their addressed field of business and in the context of KIC 'Climate Change'
- The students will be enabled to conduct quantitative and qualitative market research

### Session 2: Strategy

- The students will be enabled to integrate a marketing strategy into a overall strategy.
- The students will be enabled to formulate an overall strategy and vision for new enterprises on new markets, with new products.

### Summary abstract of the session

Companies today operate in an environment consisting of increased risk, uncertainty, less ability to forecast, fluid corporate and industry boundaries. This has resulted in a competitive landscape characterised by the forces of change, complexity, chaos and contradiction. Markets are shifting, overlapping and fragmenting and companies interact as competitors, customers, and collaborators in a global knowledge economy. The distribution channels are being reshaped, reconfigured and bypassed. Customers are more knowledgeable and demanding. In this changing context, marketing has come to be of great importance for the success of entrepreneurial ventures and is a major part of the strategic efforts.

In addition, research shows that defining and implementing a entrepreneurial strategy is one key issue to have successful start-ups, particularly when addressing new markets. Implementing a marketing strategy into an overall strategic concept, therefore, is vital to new enterprises acting in new markets.



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**Student Workload – 4 hours**

**Teaching Method** (*objectives: learning by doing, contextual learning*)

- Lecture (h)
- Assignment/ Group work (h)

**Teaching Media** (*objective: interactive teaching*)

- PPT
- Flipchart

**Recommendation of Literature and other sources of information**

A number of research articles will be announced later in alignment to the contents of the interacting R&I themes in Paris and Zurich.

**Country nodes involved**

Germany, TU Berlin

**Interaction with other R&I themes**

*Please indicate **the themes your session refers to***

Paris; Introduction to Marketing (July 13), Introduction to Strategy (July 20), Market Research (July 21)

Zurich; Marketing (August 3)

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
(*In 2010 there will be no research report, so the project is the R&I base for the work on the business plan*)

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30 July, 11-16: Coached Project Work

31 July, 9 am  
Eurostar to Paris  
Paris to Zurich

Arrival 19.14 pm at Zurich HB  
Check-in to Zurich accomodation

Free Sunday

## R&I of choice

Formal Lecture time decreases during the Zurich stay. Students will spend most of their time on coached project work to finalise their business plans.

A few more entrepreneurship lectures to all students further prepare them for the business plan competition.

Project groups can now choose from an à la carte menu of *R&I of choice* sessions.

Here, lecturers as well as practitioners are prepared to advise project groups in their respective subject fields during times which will be published soon.

Project groups can choose from those offers which are relevant to their business plan project.

Site visits to relevant firms and sites are part of the R&I of choice menu.

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## Title of Session: Research-Business Relations

## Concise Information Entrepreneurship module

### Lecturer

Name: Hölling, ETH Transfer

**Date** 2 August, 9-10

Email:

(following the Location Introduction from 8-9 am)

Address:

### Learning Outcome

#### Summary abstract of the session

- major climate challenges tackled
- (conflicting) solutions to challenges addressed
- indication of knowledge gaps, knowledge leaps, market gaps and opportunities
- indication of links to other R&I themes where appropriate

### Student Workload

#### Teaching Method *(objectives: learning by doing, contextual learning)*

- Lecture (h)
- Assignment/ Group work (h)
- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)  
*(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)*

In case of a site visit: appr. time for transfer from/ to sites

*(Timing should be tested beforehand, also against possible congestion times)*

#### Teaching Media *(objective: interactive teaching)*

- PPT
- Flipchart
- Other media

### Recommendation of Literature and other sources of information

#### Country nodes involved

*Please give name, email and phone details of one contact person in each involved node **in your session***

#### Interaction with other R&I themes

*Please indicate **the themes your session refers to***

#### Grand Challenges

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

2 August, 10-18:  
Coached Project work / R&I of choice

<b>Title of Session</b> <b>Marketing</b>	<b>Concise Information</b> <b>Entrepreneurship module</b>
<b>Lecturer</b>  <b>3 August, 8- 11 , Zurich</b>	Name: Dr. Fredrik Hacklin and Tuomas Rautanen, Senior Analyst, First Climate  Email: <a href="mailto:fhacklin@ethz.ch">fhacklin@ethz.ch</a>  Address: Department of Management, Technology and Economics ETH Zürich, KPL H 6 Kreuzplatz 5 CH-8032 Zürich Tel. +41 44 632 0565
<b>Learning Outcome</b>	Understanding and applying principles of marketing strategy and customer segmentation
<b>Summary abstract of the session</b>  <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<i>Building marketing strategy: towards new segments in a climate-sensitive world</i>  <ul style="list-style-type: none"> <li>- Principles of marketing and the value concept</li> <li>- Segmentation, targeting, positioning</li> <li>- Marketing strategy as a foundation for development of instruments</li> <li>- Case study: Segmenting the climate-sensitive consumer</li> </ul>
<b>Student Workload</b>	3 hrs, 3.8.2010, 8-11h
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )  <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li> </ul> <p>In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)</p>	<ul style="list-style-type: none"> <li>- Interactive lecture (2 h)</li> <li>- Case study with group work (1 h)</li> </ul>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )  <ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	<ul style="list-style-type: none"> <li>- KeyNote</li> <li>- Videos</li> <li>- Case study assignment distributed in class</li> </ul>
<b>Recommendation of Literature and other sources of information</b>	<ul style="list-style-type: none"> <li>- Levitt, T. 1960. Marketing myopia. <i>Harvard Business Review</i> (July-August): 45-56.</li> <li>- Yankelovich, D. and D. Meer. 2006. Rediscovering market segmentation. <i>Harvard Business Review</i> (February):</li> </ul>

122-131.	
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	ETH Zurich, Dr. Fredrik Hacklin (see above contact details)
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Coordinated with other entrepreneurship module sessions.
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey <i>(In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	How can marketing techniques be applied for creating a climate-sensitive customer?

## 3 August, 11-18: Coached Project work / R&I of choice



<b>Title of Session: Organization</b>	<b>Concise Information</b> <b>Entrepreneurship module</b>
<b>Lecturer</b> <b>4 August, 8-12 , Zurich</b>	Name: Prof. em. Fritz Fahrni Email: <a href="mailto:ffahrni@ethz.ch">ffahrni@ethz.ch</a> Address: ETH Zurich Chair Technology Management and Entrepreneurship Kreuzplatz 5 CH-8032 Zürich Tel.: +41-44-632 05 50
<b>Learning Outcome</b>	...
<b>Summary abstract of the session</b>	...
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	
<b>Student Workload</b>	4 hrs, 4.8.2010, 8-12h
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )	
<ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)</li> </ul> <p>In case of a site visit: appr. time for transfer from/ to sites</p>	<ul style="list-style-type: none"> <li>- Lecture (45')</li> <li>- Group Work: Studying 6 Business Plans and evaluating from an entrepreneurship point of view (1.5 h)</li> <li>- Discussion, questions, intensive dialogue with students in Q&amp;A session based on case studies (45' hrs)</li> </ul>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	PPT, Board, Business Plans, Personal Interaction in Q&A Session
<ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	
<b>Recommendation of Literature and other sources of information</b>	...
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	ETH Zurich, Prof. F. Fahrni (see above contact details)
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Coordinated with other entrepreneurship module sessions.
<b>Grand Challenges</b>	--
Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)	

<b>Title of Session: Climate Change Uncertainty and Risk</b>	<b>Concise Information</b> <b>Assessing Climate Change and Managing its Drivers</b>
<b>Contact</b> <b>Time:</b> 4 August, 13-15 (for the whole group)	Name: Reto Knutti Email: <a href="mailto:reto.knutti@env.ethz.ch">reto.knutti@env.ethz.ch</a> Address: Center for Climate Systems Modeling (C2SM) ETH Zurich, Universitätstrasse 16 8092 Zürich, Switzerland
<b>Learning Outcome</b>	Understanding climate modeling, climate scenarios, the associated uncertainties and the implications for adaptation and decision making
<b>Summary abstract of the session</b> <ul style="list-style-type: none"><li>- major climate challenges tackled</li><li>- (conflicting) solutions to challenges addressed</li><li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li><li>- indication of links to other R&amp;I themes where appropriate</li></ul>	Scientifically sound scenarios of future climate changes are needed to address many mitigation and adaptation issues. Yet there are uncertainties in both the emissions scenarios and the numerical climate models that prevent an accurate forecast. This course first introduces the concepts of climate modeling and emission scenarios and the methods to quantify uncertainties in climate prediction. The second part discusses how information from those models can be used to decide about mitigation and adaptation measures that are effective and robust given the uncertainties in the models.
<b>Student Workload</b>	2h
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"><li>- Lecture (h)</li><li>- Assignment/ Group work (h)</li><li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li></ul> In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)	2h lecture The course will be taught by Reto Knutti (Prof in <a href="#">Climate Physics</a> at ETH ) and David_Bresch from Swiss Re.
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"><li>- PPT</li><li>- Flipchart</li><li>- Other media</li></ul>	PPT
<b>Recommendation of Literature and other sources of information</b>	To be defined

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**Country nodes involved**

Zurich

*Please give name, email and phone details of one contact person in each involved node **in your session***

**Interaction with other R&I themes**

*Please indicate **the themes your session refers to***

**Grand Challenges**

Please suggest project(s) for student groups to work on **in groups** during the learning journey  
*(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)*

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4 August, 15-18:  
Coached Project work / R&I of choice

5 August, 8-18:  
Coached Project work / R&I of choice

5 August, 8-18:  
Coached Project work / R&I of choice

Title of Session Climate Policies and Companies	Concise Information Entrepreneurship module
<b>Lecturer</b> 9 August, 8-11, Zurich	Name: Prof. Volker Hoffmann Email: <a href="mailto:vhoffmann@ethz.ch">vhoffmann@ethz.ch</a> Address: Sustainability & Technology D-MTEC ETH Zürich, KPL H 11 Kreuzplatz 5 CH-8032 Zürich Tel. +41 44 632 0540
<b>Learning Outcome</b>	<i>Put students in a position to understand the basic functioning of carbon markets and corporate activities on these markets</i>
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	<i>Fundamentals of market based emission reductions</i> <i>Basics of EU Emission Trading</i> <i>Basics of the Clean Development Mechanism</i> <i>Case Study</i>
<b>Student Workload</b>	3 hrs, 9.8.2010, 8-11h
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)                (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li> </ul> In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against possible congestion times)	<i>Lecture (2h)</i> <i>Case Study in class (1h)</i>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	<i>ppt, blackboard, discussion</i>
<b>Recommendation of Literature and other sources of information</b>	<i>List to be provided during the lecture</i>
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	ETH Zurich, Prof. V. Hoffmann (see above contact details)
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	<i>Coordinated with other entrepreneurship module sessions and with R&amp;I sessions that treat climate policy.</i>

## Grand Challenges

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Please suggest project(s) for student groups to work on **in groups** during the learning journey  
(In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)

## 9 August, 11-15 coached project work

Title of Session	Concise Information
Project Management	Entrepreneurship module
<b>Lecturer</b> 9 August, 15-18, Zurich	Name: Prof. Christian Marxt Email: <a href="mailto:cmarxt@ethz.ch">cmarxt@ethz.ch</a> Address: Scheuchzerstrasse 188 CH-8057 Zürich Tel. +41 44 363 7476
<b>Learning Outcome</b>	The students will know how to ensure an efficient and effective project execution.
<b>Summary abstract of the session</b> <ul style="list-style-type: none"><li>- major climate challenges tackled</li><li>- (conflicting) solutions to challenges addressed</li><li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li><li>- indication of links to other R&amp;I themes where appropriate</li></ul>	<p>Entrepreneurial project management indirectly tackles two climate challenges.</p> <p>The major challenge addressed is the efficient use of existing resources. Optimizing project outcomes through a holistic project management approach can reduce the resource input by up to half.</p> <p>On the one hand it allows for an optimized use of resources and on the other hand it directly supports a fast creation process of new environmentally friendly products and services (See also more input on technology entrepreneurship and innovation management during the summer school)</p> <p>The main knowledge gap in the area is still how to ensure implementation of PM knowledge into day to day operation in companies, administration as well as other organizations and climate relevant activities.</p>
<b>Student Workload</b>	3 hrs, 9.8.2010, 15-18h
<b>Teaching Method</b> (objectives: learning by doing, contextual learning) <ul style="list-style-type: none"><li>- Lecture (h)</li><li>- Assignment/ Group work (h)</li><li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h) (We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)</li></ul> <p>In case of a site visit: appr. time for transfer from/ to sites (Timing should be tested beforehand, also against</p>	<ul style="list-style-type: none"><li>- Lecture (1.5 h)</li><li>- Discussion, questions, intensive dialogue with students in Q&amp;A session based on case study (1.5 hrs)</li></ul>

possible congestion times)

**Teaching Media** (objective: interactive teaching)

- PPT
- Flipchart
- Other media

Personal Interaction in Q&A Session, PPT, Board, Movie

**Recommendation of Literature and other sources of information**

Book: Meredith, J.; Mantel, S.: Project Management: A Managerial Approach, 6th edition. Wiley 2006

Guide: NASA Systems Engineering Handbook; NASA/SP-2007-6105 Rev1, 2007.

Gino, F.; Pisano, G.: Teradyne Corporation: The Jaguar Project, Harvard Case Study, 2006

Mitchell, J.: Hydro: from Utsira to future Energy solutions, Richard Ivey School of Business 2007

[www.pmi.org](http://www.pmi.org),

[www.ipma.ch](http://www.ipma.ch),

[www.ogc.gov.uk/methods\\_prince\\_2.asp](http://www.ogc.gov.uk/methods_prince_2.asp),

[www.hq.nasa.gov/office/hqlibrary/ppm/ppm1.htm](http://www.hq.nasa.gov/office/hqlibrary/ppm/ppm1.htm),

**Country nodes involved**

Please give name, email and phone details of one contact person in each involved node **in your session**

ETH Zurich, Prof. C. Marx (see above contact details)

**Interaction with other R&I themes**

Please indicate **the themes your session refers to**

Coordinated with other entrepreneurship module sessions.

**Grand Challenges**

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Please suggest project(s) for student groups to work on **in groups** during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)

<b>Title of Session</b> Technology Management	<b>Concise Information</b> <b>Entrepreneurship module</b>
<b>Lecturer</b> 10 August, 8-11, Zurich	Name: Prof. Roman Boutellier Email: <a href="mailto:roman.boutellier@sl.ethz.ch">roman.boutellier@sl.ethz.ch</a> Address: VP Personal & Ressourcen ETH Zürich, HG F 45 Rämistrasse 101 8092 Zürich Tel. +41 44 632 0591
<b>Learning Outcome</b>	Understanding balance between technology benefits and side effects.
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	Technology penetrates our life more and more. It gave us all our welfare, but created many problems as well. We are energized by its great power and intimidated by the magnitude of problems it creates.
<b>Student Workload</b>	3 hrs
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> </ul>	<ul style="list-style-type: none"> <li>- Discussion</li> </ul>
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> ) <ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	<ul style="list-style-type: none"> <li>- PPT</li> </ul>
<b>Recommendation of Literature and other sources of information</b>	Einstein: Letter to Roosevelt 1939
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node in your session</i>	ETH Zurich, Prof. R. Boutellier (see above contact details)
<b>Interaction with other R&amp;I themes</b> <i>Please indicate the themes your session refers to</i>	Coordinated with other entrepreneurship module sessions
<b>Grand Challenges</b> Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)	--

10 August, 11-17:  
Coached Project work / R&I of choice

<b>Title of Session: Cleantech Venture Capital</b>	<b>Concise Information Entrepreneurship module</b>
<b>Lecturer</b>	Name: Gina Domanig, Emeral Technology Venture
<b>Date</b> 10 August, 17-19	Email:
	Address:
<b>Learning Outcome</b>	
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	
<b>Student Workload</b>	
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )	
<ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)</li> </ul>	
In case of a site visit: appr. time for transfer from/ to sites	
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	
<ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	
<b>Recommendation of Literature and other sources of information</b>	
<b>Country nodes involved</b>	
<i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	
<b>Interaction with other R&amp;I themes</b>	
<i>Please indicate <b>the themes your session refers to</b></i>	
<b>Grand Challenges</b>	
Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey	



11 August, 8-18:  
Coached Project Work / R&I of Choice

# R&I of Choice

<b>Title of Session</b> Implementing low carbon innovation in urban situations: integrated urban design strategies for climate change mitigation	<b>Concise Information</b> <b>Transitioning to Resilient Low Carbon Cities</b>
<b>Lecturer</b>  <b>2 August, 14-18 , Zurich (R&amp;I of Choice)</b> <b>5 August, 15-20, Zurich (R&amp;I of choice): Getting to know Zurich</b>	Name: Christian Salewski Email: <a href="mailto:salewski@arch.ethz.ch">salewski@arch.ethz.ch</a> Address: ETH Zurich Institute for Urban Design HIL H 46.2 Wolfgang-Pauli-Str. 15 8093 Zürich Switzerland Tel: +41 44 633 67 61
<b>Learning Outcome</b>	identifying potentials and challenges of urban situations and urban change for low carbon innovation  integrating strategic urban design and low carbon innovation in urban situations  developing project implementation strategies
<b>Summary abstract of the session</b> <ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	The implementation of technological and societal innovation in real urban situations is essential for any successful step towards low carbon cities. The history of cities shows that attempts to directly translate optimized urban models or systems into built structures repeatedly failed to deliver expected outcomes. One explanation is that cities have been recognized to develop similar to fairly unpredictable complex adaptive systems. Another explanation is that urban development and change always take place under specific spatial, social, and technological conditions, which can be summarized as "urban situations". To enable the transition of cities towards sustainable and low carbon structures and functions, integrating strategic urban design and low carbon innovation is indispensable to confront the challenges of specificity and uncertainty and to achieve climate change mitigation goals.
<b>Student Workload</b>	2 days (as part of R&I of Choice (2010))
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> ) <ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential</li> </ul>	4) Meet the city: discovering urban specificity (1/2 - 1 day) <ul style="list-style-type: none"> <li>a) introduction to the urban structure of Zurich and Zurich region</li> <li>b) urban development goals and Zurich's</li> </ul>

site visit (h)

(We expect 1-2 site visits per week, i.e. not more than 1 or 2 per theme)

In case of a site visit: appr. time for transfer from/to sites

(Timing should be tested beforehand, also against possible congestion times)

"2000 watts society" vision

- c) guided site visits to selected urban situations
- 5) Ask the actors: discussion rounds on low carbon innovation for urban situations (1/2 day)
  - a) City of Zurich
  - b) Glatt valley public authorities
  - c) Zurich housing cooperations
  - d) Zurich real estate developers
  - e) Zurich mobility enterprises
- 6) Test your ideas: integrating urban design and implementation strategies (t.b.d.)
  - a) visioning: project implementation presentations (discussion round, t.b.d.)
  - b) prototyping: development of project implementation strategies (coached, t.b.d.)
  - c) testing: feedback by selected experts (sounding boards, t.b.d.)

#### Teaching Media (objective: interactive teaching)

- PPT
- Flipchart
- Other media

Discussion rounds, sounding boards, project work, PPT, other media

#### Recommendation of Literature and other sources of information

Schüller, Nicola, Petra Wollenberg, and Kees Christiaanse. *Urban reports urban strategies and visions in mid-sized cities in a local and global context*. Zürich: gta-Verlag, 2009.

Christiaanse, Kees, Tim Rieniets, and Jennifer Sigler. *Open City. Designing Coexistence*. Amsterdam: SUN, 2009.

Christiaanse, Kees, and Christian Salewski. "Do Good. Urban design and sustainability." *trans* 16 transl Band II 2009.

Michaeli, Mark, "Streifzug durch ein uneindeutiges Terrain", in: Stiftung Praktischer Umweltschutz Schweiz (Hrsg.), *Urbane Schweiz: Neu Bauen oder reparieren? Die Zukunft der Urbanen Schweiz*, Thema Umwelt No.1/08, S.8-9, erhältlich unter: <http://www.umweltschutz.ch/themaumwelt/>, Zürich 2008.

Christiaanse, Kees. "City as Loft – the Waterfront as Catalyst for the Realization of a Sustainable Urban Environment." In *OURS - Methods for Habitat City*, edited by Y-GSA, Riken Yamamoto and Mariko Terada, 84-97. Tokyo: INAX, 2008.

Christiaanse, Kees und Mark Michaeli, "Der urbane Raum im Spannungsfeld von Entwurf und Strategie / Urban Space Caught between Design and Strategy", in: Kutscher, Reinhard (Hrsg.): *Zukunft Stadt, Standortfaktor Lebensqualität: Best Practises in Europa*, S.44-47, ISBN 978-3-00-022889-6, Hamburg 2007.

Baccini, Peter, Fred Baumgartner, Thomas Lichtensteiger, Mark Michaeli, Esther Thalmann, "Einfluss von Klimaänderungen auf die Urbane Schweiz", in: OCCO und scnat(ed.), *Klimaänderungen und die Schweiz 2050*, S.123-136 ISBN 978-3-907630-26-6, Bern 2007.

Christiaanse, Kees, and KCAP Architects and Planners (Rotterdam). *Situation KCAP Architects and Planners*. Basel: Birkhäuser, 2005.

Christensen, Karen S. "Coping with Uncertainty in Planning." *Journal of the American Planning Association* 51, no. 1 (1985): 63 - 73.

Rittel, Horst W. J., and Melvin M. Webber. "Dilemmas in a general theory of planning." *Policy Sciences* 4, no. 2 (1973):

	155-69. (...)
<b>Country nodes involved</b> <i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	ETH Zurich, Christian Salewski (see above details)
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	Strategic urban design: changing urban situations for low carbon cities(see module description "strategic urban design" for contextual learning journey 2010)
<b>Grand Challenges</b> <i>Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&amp;I base for the work on the business plan)</i>	<ul style="list-style-type: none"> <li>- Implementation strategies for low carbon urban innovations</li> <li>- Consultation for public institutions in implementing 2000 Watt society in Zurich (e.g. strategy for electric mobility, eco quarters)</li> <li>- Developing a tool for planning and implementation process towards LCC (e.g. method, software, webtool)</li> <li>- Creative thinking about labeling for LCC (e.g. beyond "Minergie", construction materials...)</li> </ul>

<b>Title of Session</b> Climate services	<b>Concise Information</b> <b>Assessing Climate Change and Managing its Drivers</b>
<b>Contact</b>  <b>Time:</b> R&I of choice between 2 and 6 August 2010	Name: Isabelle Bey  Email: <a href="mailto:isabelle.bey@env.ethz.ch">isabelle.bey@env.ethz.ch</a>  Address: Center for Climate Systems Modeling (C2SM) ETH Zurich, Universitätstrasse 16 8092 Zürich, Switzerland
<b>Learning Outcome</b>	Creative thinking on Climate services
<b>Summary abstract of the session</b>	
<ul style="list-style-type: none"> <li>- major climate challenges tackled</li> <li>- (conflicting) solutions to challenges addressed</li> <li>- indication of knowledge gaps, knowledge leaps, market gaps and opportunities</li> <li>- indication of links to other R&amp;I themes where appropriate</li> </ul>	Climate services: <ul style="list-style-type: none"> <li>-state-of-the-art,</li> <li>-opportunities and plans for the coming years</li> </ul>
<b>Student Workload</b>	2h
<b>Teaching Method</b> ( <i>objectives: learning by doing, contextual learning</i> )	
<ul style="list-style-type: none"> <li>- Lecture (h)</li> <li>- Assignment/ Group work (h)</li> <li>- Input from practitioners in business and policy sector and/ or proposed potential site visit (h)</li> </ul>	1.5-2h lecture
In case of a site visit: appr. time for transfer from/ to sites	
<b>Teaching Media</b> ( <i>objective: interactive teaching</i> )	
<ul style="list-style-type: none"> <li>- PPT</li> <li>- Flipchart</li> <li>- Other media</li> </ul>	To be defined
<b>Recommendation of Literature and other sources of information</b>	To be defined
<b>Country nodes involved</b>	Zurich (Paris, to be confirmed)
<i>Please give name, email and phone details of one contact person in each involved node <b>in your session</b></i>	
<b>Interaction with other R&amp;I themes</b> <i>Please indicate <b>the themes your session refers to</b></i>	
<b>Grand Challenges</b>  Please suggest project(s) for student groups to work on <b>in groups</b> during the learning journey (In 2010 there will be no research report, so the project is the R&I base for the work on the business plan)	<b>Climate services:</b> Review of the existing, identification of gaps, of possible target customers & markets, propositions to develop new services

# Climate KIC Festival

Thursday 12th August	What	Participants	Remarks
8-10 h	Business Plan Competition part I	Project teams (4) Jury members other participants of Summer school	15 minutes of presentation for each team. 15 minutes of discussion
10-10:30 h	Break (coffee, tea, croissants)		
10:30-12:30 h	Business Plan Competition part II	Project teams (4) Jury members other participants of Summer school	
12:30-14 h	Lunch break		members of jury have lunch separately
14-14:30 h	Key note speech (by an internationally known entrepreneur in climate change innovation)	All participants and officials	
14:30-15 h	Speeches of e.g. CEO Climate KIC, a Member of the EIT Board etc.		
15-16 h	Award ceremony	All participants and officials	
16-19 h	Break (coffee, tea, fruit etc.)		People can go to their hotels to prepare themselves for the party or the dinner
19-22 h	Party (student) Dinner (officials)	Participants of Summer school, "officials" (stake holders) to be defined	

Friday 13th August	What	Participants	Remarks
10-11:15 h	Evaluation of/lessons learned during the summer school	All participants and officials in parallel groups	In every group there is a collector of the outcome
11:30-12 h	Results of the parallel sessions, Director of Education	“ ”	First overview over the Summer school as a Pilot Project; outlook
12-13 h	Farewell and Lunch (apéro riche)		optional

